In the Claims:

Please replace claims 1 and 11 all as shown below. All pending claims are reproduced below, including those that remain unchanged.

1. (Currently amended ): An illuminator device for an optical image processing system, wherein the image processing system comprises an optical system requiring partially coherent illumination, and where the illuminator comprises:

a synchrotron source of coherent or partially coherent radiation which as an intrinsic coherence that is higher than the desired coherence;

a single holographic diffuser having a surface that receives incident radiation from said source;

means for translating the surface of the holographic diffuser in at least one dimension along a plane that is parallel to the surface of the holographic diffuser wherein the rate of the motion is fast relative to integration time of said image processing system; and

a condenser optic that re-images the surface of the holographic diffuser to the entrance plane of said image processing system.

2. (original): The illuminator of claim 1 wherein the coherent of partially coherent radiation is diffracted by the surface of the holographic diffuser to generate diffracted radiation containing diffracted orders of radiation and a zero order of radiation and the illuminator further comprises filtering means to block at least the zero order radiation from reaching the condenser optic.

3. (original): The illuminator of claim 2 wherein the filtering means also blocks all but the +1 order radiation or the -1 order radiation from reaching the condenser optic.

4. (original ): The illuminator of claim 1 wherein the holographic diffuser is a binary amplitude device.

5. (original): The illuminator of claim 1 wherein the holographic diffuser is a binary phase device.

6.(original): The illuminator of claim 1 wherein the holographic diffuser is a blazed phase device.

7.(original) The illuminator of claim 6 wherein the holographic diffuser blaze is quantize to between 3 and 8 levels.

8. (original): The illuminator of claim 1 wherein the condenser optic is a single reflective element.

9. (original): The illuminator of claim 8 wherein the reflective condenser element is spherical.

10. (original): The illuminator of claims 1 wherein the means for moving the surface of the holographic diffuser causes the surface to move only linearly in the plane of the holographic surface with the proviso that the surface is not rotated.

11. (currently amended ): A method of modifying the coherence of a beam of radiation from a synchrotron source that comprises:

(a) directing the beam of radiation onto a surface of a single holographic diffuser;

(b) translating the surface of the holographic diffuser in at lest on dimension wherein the rate of the motion is fast relative to the subsequent observation time; and

(c) re-imaging the holographic diffuser surface to an observation plane.

12. (original): The method of claim 11 wherein the beam of radiation comprises coherent or partially coherent radiation that is diffracted by the surface of the holographic diffuser to generate diffracted radiation

containing diffracted orders of radiation and zero order of radiation and the method further comprising the step of blocking at least the zero order radiation from reaching the condenser optic.

13. (original): The method of claim 12 wherein the blocking step also blocks all but the +1 order radiation or the -1 order radiation from reaching the condenser optic.

14. (original): The method of claim 11 wherein step b causes the surface to move only linearly in the plane of the holographic surface with the proviso that the surface is not rotated.

15. (original): The method of claim 11 wherein the holographic diffuser is a binary amplitude device.

16. (original): The method of claim 11 wherein the holographic diffuser is a binary phase device.

17. (original): The method of claim 11 wherein the holographic diffuser is a blazed phase device.

18. (original): The method of claim 17 wherein the holographic diffuser blaze is quantize to between 3 and 8 levels.

19. (original): The method of claim 11 wherein the condenser optic is a single reflective element.

20.(original): The method of claim 19 wherein the reflective condenser element is spherical.